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NOTES ON A SPECIES OF SIMOCEPHALUS.

F. L. HARVEY, ORONO, ME.

In a gathering from a spring swamp near Orono, Me., brought into the laboratory by Mr. O. W. Knight, one of my pupils, was found a fresh water crustacean in great abundance. The species is near *S. vetulus* Mueller, but as it differs in several points from the descriptions and figures of that species given by Herrick in his Minnesota Reports, the following observations, accompanied by drawings, are made regarding it.

The striæ in our specimens arise on the ventral margin from *triangular* or *quadrangular* spaces instead of *hexagonal* as stated by Herrick. See Fig. 4. These striæ are often anastomosing and lost in the dorsal region in fine reticulations. The prominence on the posterior part of the shell is variable; obtuse, or obtuse-angled and occasionally obsolete, and also variable in position. It is usually near the dorsal region but in one specimen it is located in the middle. It is always armed with blunt teeth, which extend above and below along the posterior margin of the shell. See Fig. 1. Head often concave in front, though in some specimens rounded as shown in Herrick's figures. Eyes placed near the end of the beak, round, bordered with circular clear cells and bearing on the front, six or seven circular facets darker than the general ground color. What is called the eye seems to be an eye spot bearing dark colored *ocelli*, reminding one of the eye spot of a *Thysanuran*. See Fig. 5.

Inferior antennæ fusiform, bearing in front a prominence armed with a stout spine, which is bulbous at the base and 90 μ . long. The body of the antennæ encircled by about six rows of minute blunt teeth, one row of which adorns the distal margin. From the end arise two series of four slender setæ, bearing small bublets at the end. See Fig. 6.

Superior antennæ large. There are three short joints at the base which give great freedom of motion between the

long antennal joint and the body. The antennæ seem to us to be four-jointed below the rami, and this view is strengthened by the fact that in the young the three short basal joints are plainly marked. See Fig. 2. The third basal joint bears on the posterior a prominence armed with two slender spines. These spines show also in the young. See Fig. 2. The fourth, a long stout joint of the antenna, bears on the anterior distal end, a short spine 45μ . long. All the joints of the antennæ are ornamented with encircling rows of minute blunt spines, one row of which is located on the distal end. Rami of the antennæ *three*. The *outer* four-jointed, the basal joint short and unarmed, the second armed with a *short spine* and *not* bearing a *long two-jointed one as shown in Herrick's figures*. The two-jointed setæ arming the other joints of the outer and inner rami are *plumose the whole length and not naked below as shown by Herrick*.

Third ramus short, located at the base and between the others. Composed of *three joints, not two as stated by Herrick*. See Fig. 7.

The basal joint short and broad, the second joint fusiform, the terminal slender and hyaline. See Fig. 7.

The prominence in front of the anus armed with eleven spines, the anterior longest, all curving backward. Body back from the anus abruptly angled and *not gradually sloping* as shown in Herrick's figure. See Fig. 3. There are two long caudal spines at the posterior part of the body not shown by Herrick. See Fig. 3. At the posterior ventral angle of the shell are *four, not three, short stiff* setæ, differing from the slender plumose setæ forward. The setæ arise not from the *margin*, but a considerable distance above the edge of the shell and extend below it. The body of our form is much broader and deeper in relation to the length than shown in Herrick's figures.

In the body above the abdomen in most females were five oblong bodies. While examining one specimen, these bodies began to show motion, and soon were expelled as living young. One of these young is shown in Fig. 2. The eye was two-lobed and the body filled with spherules of a greenish brown color.

PLATE IX.

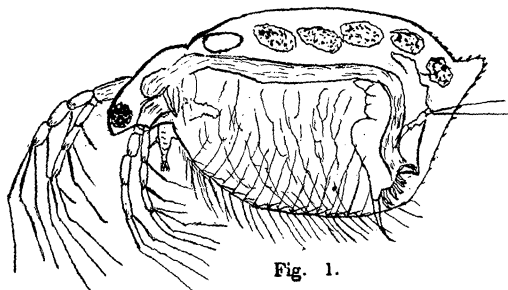


Fig. 1.



Fig. 5.

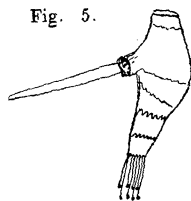


Fig. 6.

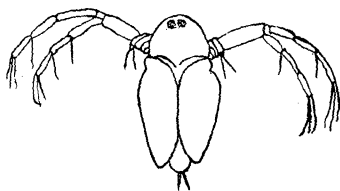


Fig. 2.



Fig. 7.

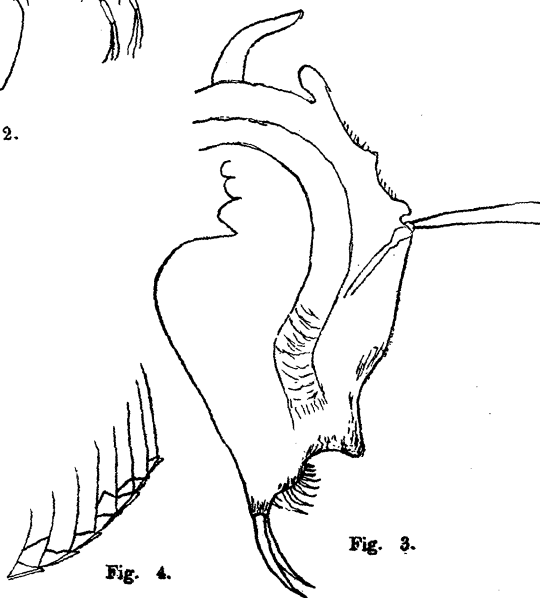


Fig. 3.

Fig. 4.

F. L. Harvey, Del.

Simocephalus vetulus, Müller.

In all characters not mentioned, this form agrees with *S. vetulus*, Mueller. Whether the above differences can be explained by omissions and oversights by observers is not known. The sharp angle of the posterior part of the body, the caudal setæ, the reticulations of the shell, the plumose basal joint of the antennæ and the *three joints* of the third ramus of the superior antennæ are enough to characterize a new species near *S. vetulus* Mueller. I have a supply of alcohol and glycerine specimens, or can get living specimens another season, and will be pleased to send them to any one who has authentic specimens of *Simocephalus vetulus*, Mueller, for comparison, as I reluctantly make a new species of this form, never having seen *S. vetulus*, Mueller. We will be pleased to receive specimens of *S. vetulus*, Mueller from any one who has them.

Specimens varied in size from 1.5 mm. to nearly 3mm. Below is given measurements of a good sized specimen.

Measurements. Total length 2.67 mm. Total breadth 1.47 mm. Head from end of beak to where it joins the shell above, .785 mm. Sup. ant. .667 mm.—ratio of joints 10-1-4-3½-3½. Inf. ant. 140μ, including spines at the end—long spine in front 90μ.—terminal setæ 33μ. Eyes 107μ. d. Claws at post. end of body .3 mm.

Two setæ at post. part of body .38 mm.

Terminal setæ of ant. .59 mm. Reticulations on side of shell 35μ apart. Plumed setæ on interventral margin 115μ. Third ramus of sup. ant. 115μ, ratio of joints 2 : 5 : 7. Longest spine in front of anus 80μ.

EXPLANATION OF PLATE.

Fig. 1.—*Simocephalus* species showing the general outlines of the female. (Original.)

Fig. 2.—The young immediately after birth, showing the two-lobed eye and the basal joints of the antennæ. (Original.)

Fig. 3.—The posterior part of the abdomen showing the angle back of the anus and the posterior setæ. (Original.)

- Fig. 4.—The triangular reticulations on the the ventral posterior margin of the shell. The petagonal and quadrangular cells, that sometimes occur above the marginal triangular cells are shown. (Original.)
- Fig. 5.—The circular eye spot with marginal clear cells and the dark colored ocelli upon the face. (Original.)
- Fig. 6.—The inferior antenna showing the spine in front, the two series of bulbous setæ at the end and the encircling rows of teeth. (Original.)
- Fig. 7.—Short three-jointed ramus at the base and between the two large rami of the superior antenna, (Original.)